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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,231	07/24/2007	Madhu Ranjan	0091830.0543475	8033

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EXAMINER
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TUROCZY, DAVID P

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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11/16/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@fbtlaw.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/597,231	RANJAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	DAVID TUROCY	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/9/07</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-9 are objected to because of the following informalities: Claim 1 includes (RE's); however parenthesis are only appropriate for reference characters. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 8-10, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent Publication 20010051225 by Van Ooij et al.

Van Ooij discloses a Zn--Al eutectoid hot-dip galvanizing bath for stainless steel, where the galvanizing bath further comprises an alloy metal selected from the group consisting of Bi, rare-earth metals (RE's) or Si (0042-0044).

Claim 2: Van Ooij discloses Al about 22.1% w/w to about 22.7% w/w (0029).

Claims 8-9: Van Ooij discloses a bath temperature of about 530.degree. C. to about 600.degree. C. and a dip time from about 60 to about 180 seconds (0042). Additionally, the examiner notes the composition is capable of being utilize in this manner.

Claim 10: Van Ooij explicitly disclose a hot-dipped galvanized steel coating comprising: a) an interface layer comprising binary Fe.sub.2Al.sub.5;b) an intermediate layer comprising a multiphase microstructure and consisting of a phase rich in Al and a phase rich in Zn; and c) an overlay layer (0051, examples).

Claims 12-14: Van Ooij discloses the process as claimed using the components as claimed, see discussion above.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Ooij.

The examiner maintains the position as above, Van Ooij explicitly discloses using bismuth, see 0043, however, at the very least inclusion of Bi in the galvanization bath would have been obvious to one of ordinary skill in the art at the time of the invention because Van Ooij explicitly discloses inclusion of Bi will provide certain benefits and therefore one would desire to reap those discloses benefits.

Claim 2, 12: As for the requirement of the aluminum context, Van Ooij explicitly discloses about 22 wt%, which the examiner maintains is about 22.1 wt% as claimed.

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Alternatively, A *prima facie* case of obviousness exists where the claimed ranges and prior art do not overlap but are close enough that one in ordinary skill in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 f.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05.

Finally, Van Ooij discloses 17-40 wt% and In the case where the claimed ranges “overlap or lie” inside ranges disclosed by prior art a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257 191 USPQ 90. See MPEP 2144.05.

Claims 3-4, 11, and 15: Van Ooij discloses including an alloy material to control the appear and properties of the coating and discloses including Bi which will added at low concetrations to control viscosity of the bath, dross formation, and reactivity of the bath (0043) and therefore explicitly discloses the amount of Bi is low and is a result effective variable and therefore, it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the amount of Bi used in the process, through routine experimentation, to impart the coating with the desired properties. Additionally, It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an appropriate amount of Bi, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Ooij in view of US patent 4812371 by Shindou et al.

Van Ooi discloses all that is discussed above and is applied here for the same reasons as applied above. Additionally, Van Ooij explicitly discloses "small quantities of other metals may be added to the zinc-aluminum bath to control the appearance and properties of the coating formed." (0043).

Claims 5-6: Shindou et al discloses inclusion of rare earth elements (Mischmetal) of La and Ce to the Zn-Al galvanization bath and therefore using one or both of these elements to add to the bath would have been obvious to one of ordinary skill in the art to provide the benefits of refining the crystal grain of the Al and to provide luster and smoothness to the coating (column 5). Shindou discloses 0.02 to 0.5 wt % of the rare earth metal in the bath and therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an appropriate amount of La and Ce, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 7: Shindou discloses inclusion of Si to the Zn-Al galvanization bath to enhance the appearance of the coating and therefore including Si would have been obvious to reap the benefits of improving appearance. Shindou discloses 0.02 to 1 wt% of Si, which in the case where the claimed ranges "overlap or lie" inside ranges disclosed by prior art a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257 191 USPQ 90. See MPEP 2144.05. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an appropriate amount of Si, since it has been held that discovering an optimum value of a

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result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID TUROCY whose telephone number is (571)272-2940. The examiner can normally be reached on Monday, Wednesday and Friday from 7 a.m. - 6 p.m., Tuesday and Thursdays 7-10 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Turocy/  
Examiner, Art Unit 1792